What is claimed is:

1. A high damage threshold multi-clad optical fiber suitable for use as a fiber laser / fiber amplifier, comprising:

a rare-earth-doped active core with index of refraction n_1;

a pump core with index of refraction n_2, surrounding said active core;

a glass inner cladding layer with index of refraction n_3, surrounding said pump core;

a protective coating, surrounding said additional glass cladding layer, with an index of refraction n_4; and

wherein n_1 is greater than n_2, n_2 is greater than n_3, and n_3 is greater than n_4.

2. The multi-clad optical fiber according to claim 1, wherein said active core is used to generate and / or amplify and transmit laser radiation, and wherein said pump core is used to transmit the pump radiation that is necessary to excite the laser-active ions within said active core.

3. The multi-clad optical fiber according to claim 2, wherein said glass inner cladding layer has a thickness sufficient to minimize an amount of an evanescent field of said pump radiation in said protective coating.

4. The multi-clad optical fiber according to claim 2, wherein said glass inner cladding layer has a thickness sufficient to prevent an evanescent field of said pump radiation from penetrating said protective coating.

5. The multi-clad optical fiber according to claim 1, wherein said active core is selected from the group consisting of near-single mode and single mode.

6. The multi-clad optical fiber according to claim 1, wherein said active core further comprises additional co-dopants selected from the group consisting of Aluminum, Germanium, Boron, and Phosphorus.

7. The multi-clad optical fiber according to claim 1, wherein said pump core is made from a material selected from the group consisting of pure silica, germanium-doped silica, and fluorine-doped silica.

8. The multi-clad optical fiber according to claim 1, wherein said glass inner cladding layer is made from a material selected from the group consisting of pure silica and fluorine-doped silica.

9. The multi-clad optical fiber according to claim 1, wherein said protective coating is made from a polymer.

10. The multi-clad optical fiber according to claim 1, wherein said pump core has a non-circular cross section.

11. The multi-clad optical fiber according to claim 10, wherein said pump core is D-shaped.

12. The multi-clad optical fiber according to claim 1, wherein said glass inner cladding layer has a non-circular cross section.

13. The multi-clad optical fiber according to claim 12, wherein said glass inner cladding layer is D-shaped.

14. The multi-clad optical fiber according to claim 1, wherein said protective coating is made from a material selected from the group consisting of silicone and fluoro-acrylate.

15. The multi-clad optical fiber according to claim 1, further comprising at least one additional glass outer cladding layer between said glass inner cladding layer and said protective coating, wherein an index of refraction of said outer cladding layer is less than n_3 and greater than n_4.

16. The multi-clad optical fiber according to claim 15, wherein said glass outer cladding layer is made from fluorine-doped silica.

17. A method for manufacturing said multi-clad optical fiber of claim 1, comprising the steps of:

a. vaporizing a composition containing silicon and preselected dopants;

b. depositing said silicon and dopants on an interior of a hollow silica rod to form an interior layer of doped silica;

c. repeating step b until a predetermined thickness of said doped silica is present;

d. if necessary incorporating pre-selected dopants into the interior silica layer by means of the solution method;

e. heating and collapsing said hollow silica rod to form a solid rod with said doped silica as a solid active core and said hollow silica rod as a pump core layer;

f. depositing a second doped silica layer on an exterior of said solid rod by plasma-enhanced chemical vapor deposition;

g. heating and drawing said preform to form said optical fiber;

h. depositing a polymer coating on an exterior of said second doped silica layer, to form a finished preform. The polymer layer can be applied either prior to fiber drawing or during the fiber drawing process.

18. The method according to claim 17, wherein interior deposition step b is accomplished by a method selected from the group consisting of Modified Chemical Vapor Deposition (MCVD), MCVD in conjunction with the solution method, and Plasma-enhanced Chemical Vapor Deposition (PCVD).

19. The method according to claim 17, wherein said dopants of steps a-d are rare earth ions.

20. The method according to claim 17, wherein exterior deposition step f is accomplished by a method selected from the group consisting of Modified Chemical Vapor Deposition (MCVD), Plasma-enhanced Chemical Vapor Deposition (PCVD), and Outside Vapor Deposition (OVD).